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A new Neotropical genus in the Laemophloeidae, with notes on *Phloeolaemus* Casey (Coleoptera: Cucujoidea)

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Abstract. The genus *Paraphloeolaemus* Thomas (Coleoptera: Cucujoidea: Laemophloeidae) is described for two new Neotropical species, *P. vorticosus* Thomas, **new species**, and *P. pterosiagon* Thomas, **new species**. Diagnoses and illustrations are provided.

The following 16 species are transferred from *Laemophloeus* Dejean (s. l.) to *Phloeolaemus* Casey: *Phloeolaemus anticus* (Sharp, 1899: 518) [= *Laemophloeus anticus* Sharp, 1899], **new combination**; *Phloeolaemus boops* (Sharp, 1899: 517) [= *Laemophloeus boops Sharp*, 1899], **new combination**; *Phloeolaemus castaneipennis* (Grouvelle, 1876: 494) [= *Laemophloeus castaneipennis* Grouvelle, 1876: 494], **new combination**; *Phloeolaemus championi* (Sharp, 1899: 516) [= *Laemophloeus championi* Sharp, 1899], **new combination**; *Phloeolaemus curtus* (Grouvelle, 1876: xxxiii) [= *Laemophloeus curtus* Grouvelle, 1876], **new combination**; *Phloeolaemus endomychus* (Sharp, 1899: 519) [= *Laemophloeus endomychus* Sharp, 1899], **new combination**; *Phloeolaemus hoplites* (Sharp, 1899: 517) [= *Laemophloeus hoplites* Sharp, 1899], **new combination**; *Phloeolaemus ignobilis* (Sharp, 1899: 518) [= *Laemophloeus ignobilis* Sharp, 1899], **new combination**; *Phloeolaemus impressus* (Grouvelle, 1876: xxxiii) [= *Laemophloeus impressus* Grouvelle, 1876], **new combination**; *Phloeolaemus lacerdae* (Grouvelle, 1877: 211) [= *Laemophloeus lacerdae* Grouvelle, 1877], **new combination**; *Phloeolaemus macrocephalus* (Schaeffer, 1910: 214) [= *Laemophloeus macrocephalus* Schaeffer, 1910], **new combination**; *Phloeolaemus punctulaticollis* (Hetschko, 1929: 94) [= *Laemophloeus punctulaticollis* Hetschko, 1929], **new combination**; *Phloeolaemus reitteri* (Grouvelle, 1877: 210) [= *Laemophloeus reitteri* Grouvelle, 1877], **new combination**; *Phloeolaemus semiflavus* (Grouvelle, 1876: 497) [= *Laemophloeus semiflavus* Grouvelle, 1876], **new combination**; *Phloeolaemus sharpi* (Hetschko, 1929: 41) [= *Laemophloeus sharpi* Hetschko, 1929], **new combination**; *Phloeolaemus straminipennis* (Reitter, 1876: 47) [= *Laemophloeus straminipennis* Reitter, 1876], **new combination**; *Phloeolaemus teapensis* (Grouvelle, 1876: 494) [= *Laemophloeus teapensis* Grouvelle, 1876], **new combination**.

Introduction

The genus *Phloeolaemus* was proposed by Casey (1916: 127) as a subgenus of *Laemophloeus* Dejean for the single species *Laemophloeus immersus* Sharp. Like most of the "cucujid" subgeneric names proposed by Casey, *Phloeolaemus* was not recognized by subsequent authors until much later in the 20th Century. It was raised to generic rank (Thomas 1993: 70) and two additional species – *L. chamaeropis* Schwarz, 1878 and *L. quinquearticulatus* Grouvelle, 1896 – were assigned to it. In recent years, additional species have been included in *Phloeolaemus* in on-line species lists (e.g. Hallan 2008; Thomas 2011). None of these generic reassignments has taxonomic standing as none was published.

Over the past several decades I have accumulated many specimens of *Phloeolaemus*, examined type specimens, and photographed them when possible. Occasionally I encountered specimens that resembled those of *Phloeolaemus* but seemed to be generically distinct. The purpose of this paper is to propose a new genus and two new species for these specimens, and to transfer species from *Laemophloeus* (s. l.) to *Phloeolaemus* where justified.

Materials and Methods

Habitus photos were taken through a Leica Z16 APO microscope equipped with a JVC KY-F75U 3-CCD camera and controlled by Syncroscopy AutoMontage® software; high magnification genitalic photographs were taken using a Leica DM 2500 microscope and resulting image stacks were processed

using CombineZP®. Scanning electron photomicrographs were produced with a JEOL JSM-5510LV. Images were post-processed with Jasc Paint Shop Pro 7®. Genitalia were dissected as described in Thomas (1984) and were slide-mounted in Hoyer's solution for photography. Subsequently, they were soaked off the slide and imbedded in a drop of dimethyl hydantoin formaldehyde on the card point with the respective specimen. Genitalic terminology follows that used in Thomas (1984).

Measurements, using the measuring utility in Leica Application Suite v. 3 on a Leica M205C, were taken as follows: **Length:** Total body length was derived by adding the following measurements: Head, from anteriormost point of epistome to basal line at middle. Pronotum: from anterior edge to posterior edge at middle. Elytra: from anterior edge of scutellum to posteriormost point of elytron. **Width:** Head, widest point across eyes. Pronotum: widest point, usually behind anterior angles. Elytra: across widest point of one elytron and doubled for total width.

Label data for types of new species are reported verbatim; data are surrounded by quotes, lines are separated by a single forward slash (/), and separate labels are indicated by a doubled forward slash (//).

Codens for collections referred to in the text are:

BMNH — The Natural History Museum, London, England
DEFS — Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil
FMNH — Field Museum of Natural History, Chicago, IL, USA
SEMC — Snow Entomological Museum, University of Kansas, Lawrence, KS, USA

Paraphloeolaemus Thomas, n. gen.

Type species. *Paraphloeolaemus vorticosus* Thomas, n. sp., here designated.

Diagnosis. From individuals of *Phloeolaemus*, those of *Paraphloeolaemus* can be distinguished by their conspicuously pubescent dorsal surface (except *Ph. curtus* which exhibits sparse pronotal pubescence (Fig. 24)), and coiled flagellum. From other Neotropical laemophloeid genera with open procoxal cavities and conspicuous dorsal pubescence, notably *Odontophloeus* Thomas and *Rhabdophloeus* Sharp, individuals of *Paraphloeolaemus* can be distinguished by their entire lateral pronotal margins, versus crenulate margins in those two genera.

Description. Form elongate-ovate, strongly dorso-ventrally compressed. Dorsal surface heavily pubescent in a characteristic swirling pattern on head and pronotum (Fig. 1, 13); surface between punctures with or without obvious microsculpture, moderately glossy.

Head: Proportionally large, transverse; mandibles large and prominent (Fig. 2, 14); labrum emarginate or not (Fig. 2, 14); ventral mouthparts as usual for family (Fig. 5). Epistome almost straight (Fig. 2, 14), emargination over labrum very broad and very shallow, slightly angulate laterally; emarginations over mandibles slightly deeper; emarginations over antennal insertions absent. Carina bordering disk of head strong anteriorly and laterally, bordered medially with a shallow groove; a second carina extends posteriorly from inner margin of eye to base of head. Antennae short, about half of body length, moderately clubbed (Fig. 1, 13). Eyes relatively small, flat to moderately convex (Fig. 2, 14).

Thorax: Pronotum broad, more or less rectangular (Fig. 3, 14); widest at about apical third, only slightly narrowing to base; slightly, evenly curved laterally and strongly explanate; anterior angles acute, produced; posterior angles almost right, not produced; lateral lines represented by a strong carina. Intercoxal process of prosternum broad, slightly curved; anterior coxal cavities broadly open posteriorly (Fig. 6). Mesocoxae broadly separated; metacoxae very broadly separated, intercoxal process of first visible ventrite broad and truncate. Elytra broadly oval, broadly explanate laterally, epipleura very wide and complete almost to apex. Third cell complete; second cell absent; first cell represented by a sutural line at apical third. Legs short, femora, especially of hind legs, robust; tarsal formula 5-5-5 in both sexes.

Abdomen: First visible ventrite longest; 2-4 subequal, 5 slightly longer.

Male genitalia: Parameres separated, relatively narrow; ventral piece produced posteriorly at corners, armed with stout setae (Fig. 12, 16); flagellum present, tightly coiled (Fig. 11, 17).

***Paraphloeolaemus vorticosus* Thomas, n. sp.**
Fig. 1-8, 11-12

Types. Holotype, male, deposited in DEFS, with following label data: "Brasilien"/ "Rondon"/ "24°38'B. 54°07'L."/ "Fritz Plaumann"/ "X.1952"/"500m" [label printed on white paper with pale blue oblique lines].

Diagnosis. Adults can be distinguished from other congeners by their less convex eyes, emarginate labrum, more strongly produced anterior pronotal angles, and lack of mandibular modification in males.

Description: 1.9 mm long; elongate-ovate; dorsal surface dark testaceous; mouthparts, legs and antennae paler.

Head: 2.1× wider than long; longitudinal line not distinguishable; surface moderately, shallowly punctate, punctures smaller than an eye facet, separated by 3-4 diameters, each subtending a thick, subdepressed seta of various orientations; surface between punctures obscured by pubescence but microsculpture evident at least laterally. Labrum large, emarginate; mandibles large, rather elongate, subequal in length to head. Eyes about 0.3× length of head, weakly convex (Fig. 2). Antennal insertion not visible in dorsal view; antennae short (Fig. 1), attaining base of pronotum; scape longer than broad; pedicel slightly elongate, about 0.8× length of scape; III elongate, 0.7× length of scape; ratios of antennomeres 1.7, 1.4, 1.3, 1.0, 1.0. 1.1, 1.1, 1.0, 1.4, 1.4, 1.7. Antennomeres IX-X each with two well-defined sub-apical pits (Fig. 7-8) each occupying about 0.25× of apical circumference of antennomere. Presumed olfactory sensillae are confined to those pits.

Thorax: Pronotum (Fig. 3) transverse, 1.8× wider than long; widest just behind apical angle; anterior angles acute, strongly produced; hind angles obtuse, not produced; punctation and pubescence similar to head. Elytra 1.3× longer than wide.

Male genitalia: Parameres narrowly triangular (Fig. 11–12), separated for entire length; basal piece laterally strongly projecting posteriorly, each side with three stout setae on hind margin; body of basal piece with about six setae on each side; internal sac with microspinose fields at about midpoint and with a tightly coiled flagellum distally.

Variation: The only variation observed among individuals of this species was body length, with paratypes ranging from 1.7 mm to 1.9 mm. There is no external sexual dimorphism and the gender can be determined only by examining relaxed specimens in liquid with transmitted light, dissection, or if the specimen has the ovipositor protruding.

Distribution. Brazil, Paraguay, Peru.

Paratypes. 28, as follows: 1, "PARAGUAY: Rapua"/"Yatai, prop. Hosstettler family"/"San Rafael Reserve, 100 m"/ "26°38'17 S, 55°39'50 W"/"21-25NOV 2000, Z.H. Falin"/"PAR1F00 040 ex: flight intercept trap"//"[bar code]"/"SM0275181"/"KUNHM-ENT" (SEMC); 1, "PARAGUAY: Rapua"/"Karonay, 17 km W,"/"San Rafael Reserve, 90-110 m"/"26°45'53 S, 55°50'37 W"/"19-20-NOV 2000; Z.H. Falin"/ "PAR1FA00 016 ex: flight intercept trap"//"[bar code]"/"SM0274705"/"KUNHM-ENT" (SEMC); 2, "PERU: Madre de Dios"/"Pakitza Bio. Stn., Castanal Trail,"/"Reserved Zone, Manu National Park"// "11°56'41 S, 71°17'0 W, 317 m"/"15-16 OCT 2000 R. Brooks"/"PERU1B00 013 ex: flight intercept trap"/ /"[bar code]"/"SM0271871"/"KUNHM-ENT" (SEMC); 1, "PERU: Loreto Province"/"68km SW from Iquitos to Nauta"/"Rio Itaya, 120m. elev."/"9-FEB-2007, A. Petrov collr." (SEMC); 2, "PERU: Tambopata Prov."/"Madre de Dios Dpto."/"15km NE Puerto"//"Maldonado Reserva"/"Cuzco Amazónico"/"12°33' S, 69°03' W"/"200m, camp"//"17 July 1989, J.S.Ashe"/ "R.A.Leschen #541"/"ex: under bark" (SEMC); 1, "PERU: Tambopata Prov."/"15 km NE Pto. Maldonado"/ "17 July 1989, 200 km"/ "J. Ashe, R.Leschen, #542 "/ "ex: on logs" (SEMC); 5, "Brasilien"/"Rondon"/"24°38'B. 54°07'L."/"Fritz Plaumann"/"X.1952 /500m" (4, DEFS; 1, FSCA); 1, "Fortaleza R G"/"August 1951 /"F. Plaumann" (DEFS); 3, "BRAZIL: Sta. Catharina"/"Nova Teutonia"/"XII:30:1935 /"F. Plaumann"//"holzkammer"/"wood chamber?"/"(storage?)"//"A. Bierig Colln."/"Acc. Z-13812 /"Field Mus. Nat. Hist." (FMNH); 2, "BRAZIL: Sta. Catharina"/ "Nova Teutonia"/"Rec'd 23:III:1936"/"leg. F. Plaumann"//"A. Bierig Colln."/"Acc. Z-13812"/"Field Mus. Nat. Hist." (1, FMNH; 1, FSCA); 4, "BRAZIL: Sta. Catharina"/ "Nova Teutonia"/"XI:3-8:1935"/"leg. F.

Plaumann”//“A. Bierig Colln.”/“Acc. Z-13812”/“Field Mus. Nat. Hist.” (FMNH); 1, “BRAZIL: Sta. Catharina”/“Nova Teutonia”/“1936”/“leg. F. Plaumann”//“A. Bierig Colln.”/“Acc. Z-13812”/“Field Mus. Nat. Hist.” (FMNH); 1, “BRAZIL: Santa”/“Catharina Nova”/“Teutonia Sept”/“F. Plaumann” (FMNH); 1, same, except “Mar.” (FMNH); 2, “Fry”/ “Rio Jan°”// “3456 // “Fry Coll.”/ “1905-100.”/ “standing as”/ “Laemophloeus”/“mariae Grouv.” (BMNH).

Etymology. Named for the swirling pubescence pattern on the head and pronotum.

Discussion. In most laemophloeids examined, a distinct margin separates the main body of the club antennomeres, which has a distinctly microreticulate surface, from the peri-articular gutter (Crowson 1981; Thomas 2010, 2013), in which are located the specialized, presumably olfactory, sensilla and which has a non-microreticulate surface (e.g. Fig. 9). In *P. vorticosus*, the sensilla are confined within a sharply delimited pit surrounded by microreticulate surface (Fig. 8). Thus far, only a species of *Rhabdophloeus* (Fig. 10) has been found to share this character state. *Phloeolaemus quinquearticulatus* (Grouvelle) has the sensilla restricted to a distinct pit within the peri-articular gutter, which is marked by a distinct margin (Fig. 9); *P. chamaeropis* is similar, but the pit is not so distinctly margined. Two specimens of *P. vorticosus* in the BMNH are labelled as *Laemophloeus* (s. l.) *mariae* Grouvelle (1897: 394), described from Sumatra. I have examined a syntype of *L.* (s. l.) *mariae* from Museo Civico di Storia Naturale Giacomo Doria, Genoa, Italy; it is generically distinct from *Paraphloeolaemus*.

***Paraphloeolaemus pterosiagon* Thomas, n. sp.**
Fig. 13-18

Types. Holotype, male, deposited in SEMC, with following label data: “HONDURAS: Francisco”/ “Morazán, Zamorano”/“30 VI 1994 14°N, 87°W”/“820m, Ashe,Brooks #258”/“ex rotting breadfruit”.

Diagnosis. Adults can be distinguished from other congeners by their more convex eyes, non-emarginate labrum, less strongly produced anterior pronotal angles, and conspicuous mandibular modification in males.

Description. 1.3 mm long; elongate-ovate; dorsal surface dark testaceous; mouthparts, legs and antennae paler.

Head: 2.9× wider than long; longitudinal line not distinguishable; surface moderately, shallowly punctate, punctures smaller than an eye facet, separated by 3-4 diameters, each subtending a thick, subdepressed seta of various orientations; surface between punctures obscured by pubescence, but appears microreticulate. Labrum large, not emarginate, mandibles large, curved, with large, triangular latero-ventral process (Fig. 15). Eyes about 0.5× length of head, moderately convex (Fig. 14). Antennal insertion not visible in dorsal view; antennae short (Fig. 13), attaining base of elytra; scape longer than broad; pedicel slightly elongate, about 0.8× length of scape; III elongate, 0.6× length of scape; ratios of antennomeres 2.1, 1.7, 1.4, 1.2, 1.2, 1.1, 1.0, 1.0, 1.7, 1.7, 2.2. Specimen not examined under SEM, but antennomeres IX-X appear similar to above species at 180× under light microscope.

Thorax: Pronotum (Fig. 14) transverse, 1.8× wider than long; widest just behind apical angle; anterior angles acute, moderately produced; hind angles obtuse, not produced; punctation and pubescence similar to head. Elytra 1.3× longer than wide.

Male genitalia: Parameres narrowly triangular (Fig. 16–18), separated for entire length; basal piece laterally strongly projecting posteriorly, each side with three stout setae on hind margin; body of basal piece with about three or four setae on each side; internal sac with a crescentic sclerotization basally and two smaller crescentic sclerotizations distally, preceding a tightly coiled flagellum.

Distribution. Honduras.

Etymology. The species epithet is derived from the Greek “winged jaw” for the shape of the very large lateroventral projection on the mandibles of the only known specimen.

Variation. The only known specimen of this species is a male. Based on analogy with *Phloeolaemus*, it is likely that the female will lack the mandibular modification present in the male holotype.

Discussion. Considering that the type locality is the site of Escuela Agrícola Panamericana El Zamorano, one of the better-known and well-collected locations in Honduras, the existence of a single known specimen suggests that this species is either relatively rare or that its true habits and habitats remain unknown.

Incertae sedis

Included in *Paraphloeolaemus* is an anomalous specimen (Fig. 19) with the following label data: "PANAMA: Canal Zone"/"Barro Colorado I."/"I:14:1959"/leg. H.S. Dybas"//"FMNH(HD)# 59-284"/"Berlese: bark &"/"under bark debris"/"of fallen tree" (FMNH). The specimen is 1.1 mm in length. At first I considered this specimen as possibly the female of *P. pterosiagon* because its mandibles lacked a lateroventral projection. However, dissection proved that it is a male. The genitalia, which were found to be damaged inside the abdomen, do not provide conclusive evidence to assign it to either of the species above, or to describe it as a new species. Although the characteristic coiled flagellum was not recovered with the rest of the genitalia, external characters place it within *Paraphloeolaemus*. Additional specimens are needed to resolve its status.

Phloeolaemus Casey

Phloeolaemus Casey, 1916: 127 (as subgenus of *Laemophloeus* Dejean, raised to generic rank by Thomas 1993: 70). Type species: *Laemophloeus immersus* Sharp, 1899: 520, by original designation and monotypy.

Currently assigned species. *Phloeolaemus immersus* (Sharp), *P. chamaeropis* (Schwarz, 1878: 359) and *P. quinquearticulatus* (Grouvelle, 1896: 201, 202), the latter two transferred by Thomas (1993). The following new combinations are the result of: **a**) examination of syntypes in the BMNH; **b**) examination of authoritatively identified specimens in the BMNH; **c**) original description and/or illustration; **d**) examination of authoritatively identified specimens in the MNHN; or **e**) examination of type material in the MNHN.

Phloeolaemus anticus (Sharp, 1899: 518) [= *Laemophloeus anticus* Sharp, 1899], **new combination**; **a** (Fig. 20)

Phloeolaemus boops (Sharp, 1899: 517) [= *Laemophloeus boops Sharp*, 1899], **new combination**; **a** (Fig. 21)

Phloeolaemus castaneipennis (Grouvelle, 1876: 494) [= *Laemophloeus castaneipennis* Grouvelle, 1876: 494], **new combination**; **b** (Fig. 22)

Phloeolaemus championi (Sharp, 1899: 516) [= *Laemophloeus championi* Sharp, 1899], **new combination**; **a** (Fig. 23)

Phloeolaemus curtus (Grouvelle, 1876: xxxiii) [= *Laemophloeus curtus* Grouvelle, 1876], **new combination**; **c** (Fig. 24)

Phloeolaemus endomychus (Sharp, 1899: 519) [= *Laemophloeus endomychus* Sharp, 1899], **new combination**; **a** (Fig. 25)

Phloeolaemus hoplites (Sharp, 1899: 517) [= *Laemophloeus hoplites* Sharp, 1899], **new combination**; **a** (Fig. 26)

Phloeolaemus ignobilis (Sharp, 1899: 518) [= *Laemophloeus ignobilis* Sharp, 1899], **new combination**; **a** (Fig. 27)

Phloeolaemus impressus (Grouvelle, 1876: xxxiii) [= *Laemophloeus impressus* Grouvelle, 1876], **new combination**; **c**

Phloeolaemus lacerdae (Grouvelle, 1877: 211) [= *Laemophloeus lacerdae* Grouvelle, 1877], **new combination**; **e** (Fig. 28)

Phloeolaemus macrocephalus (Schaeffer, 1910: 214) [= *Laemophloeus macrocephalus* Schaeffer, 1910], **new combination**; **c**

Phloeolaemus punctulaticollis (Hetschko, 1929: 94) [= *Laemophloeus punctulaticollis* Hetschko, 1929] [= *Laemophloeus puncticollis* Sharp, 1899: 519] [praeocc. Fleischer 1829], **new combination**; **a** (Fig. 29)

Phloeolaemus reitteri (Grouvelle, 1877: 210) [= *Laemophloeus reitteri* Grouvelle, 1877] [= *Laemophloeus breviceps* Sharp, 1899: 516] [see Arrow 1909], **new combination**; **a** (Fig. 30)

Phloeolaemus semiflavus (Grouvelle, 1876: 497) [= *Laemophloeus semiflavus* Grouvelle, 1876], **new combination**; **e** (Fig. 31)

Phloeolaemus sharpi (Hetschko, 1930: 41) [= *Laemophloeus sharpi* Hetschko, 1930] [= *Laemophloeus minutus* Sharp, 1899: 518] [not Olivier 1791], **new combination**; **a** (Fig. 32)

Phloeolaemus straminipennis (Reitter, 1876: 47) [= *Laemophloeus straminipennis* Reitter, 1876], **new combination**; **d** (Fig. 33)

Phloeolaemus teapensis (Grouvelle, 1876: 494) [= *Laemophloeus teapensis* Grouvelle, 1876], **new combination**; **b** (Fig. 34)

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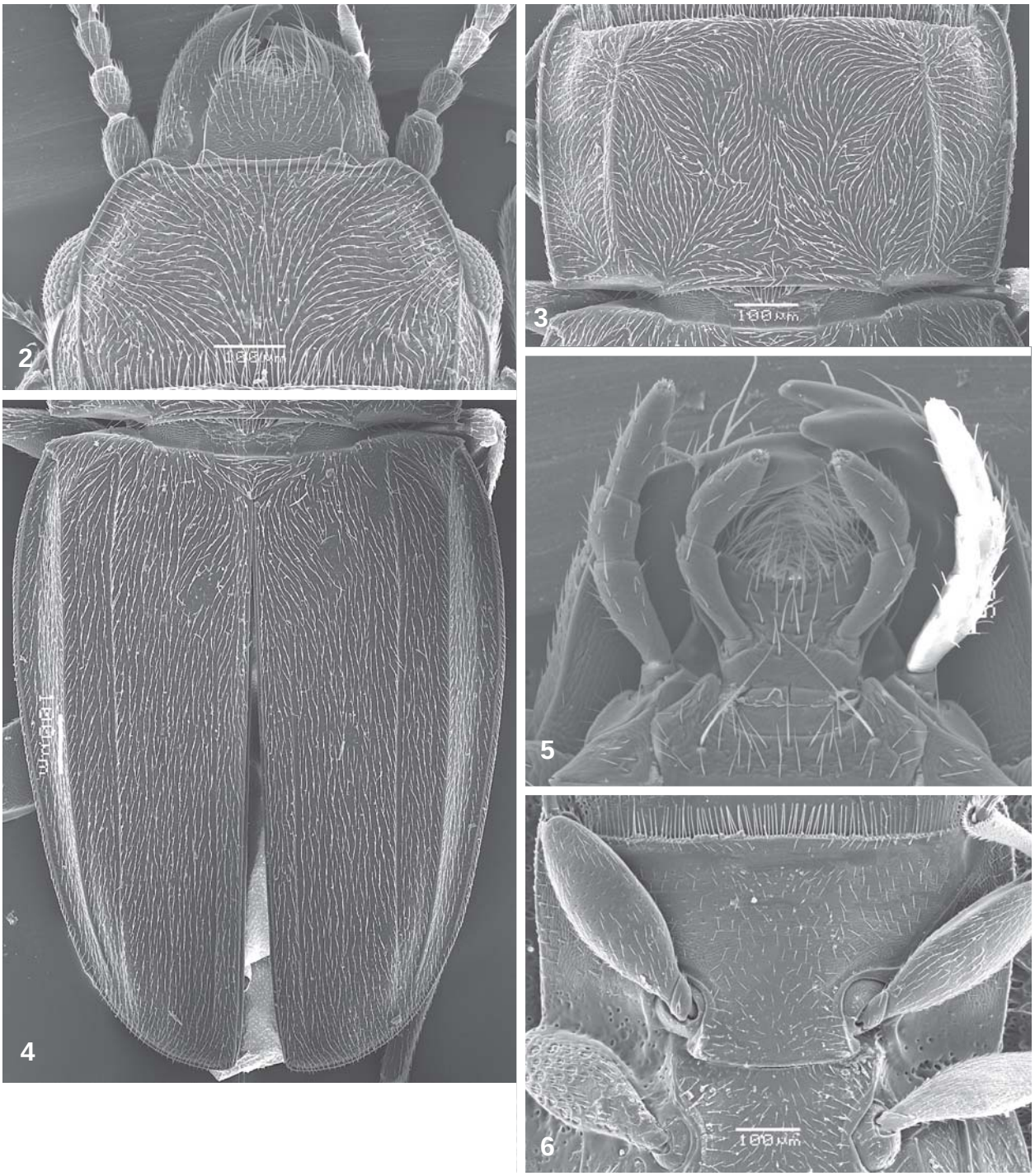
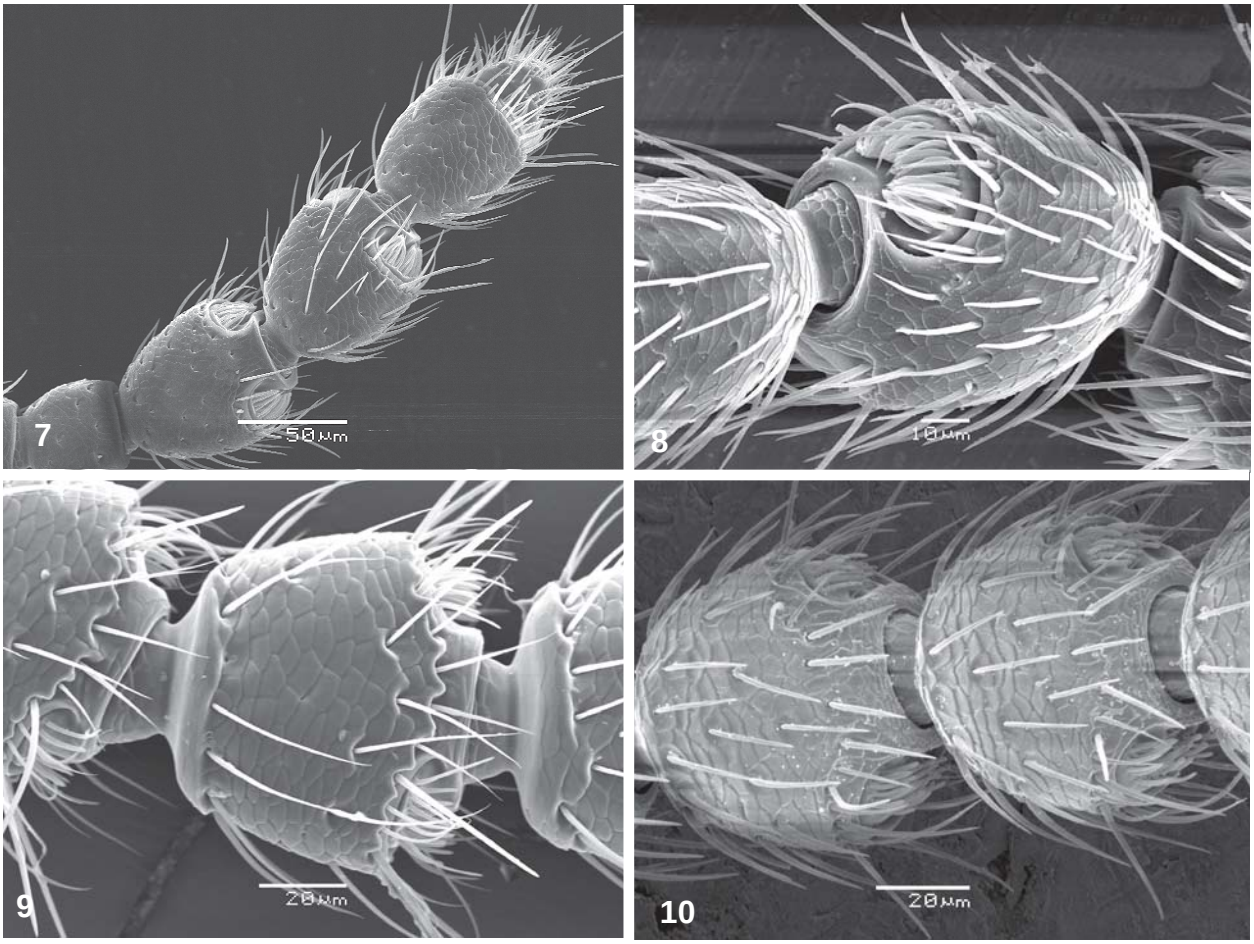
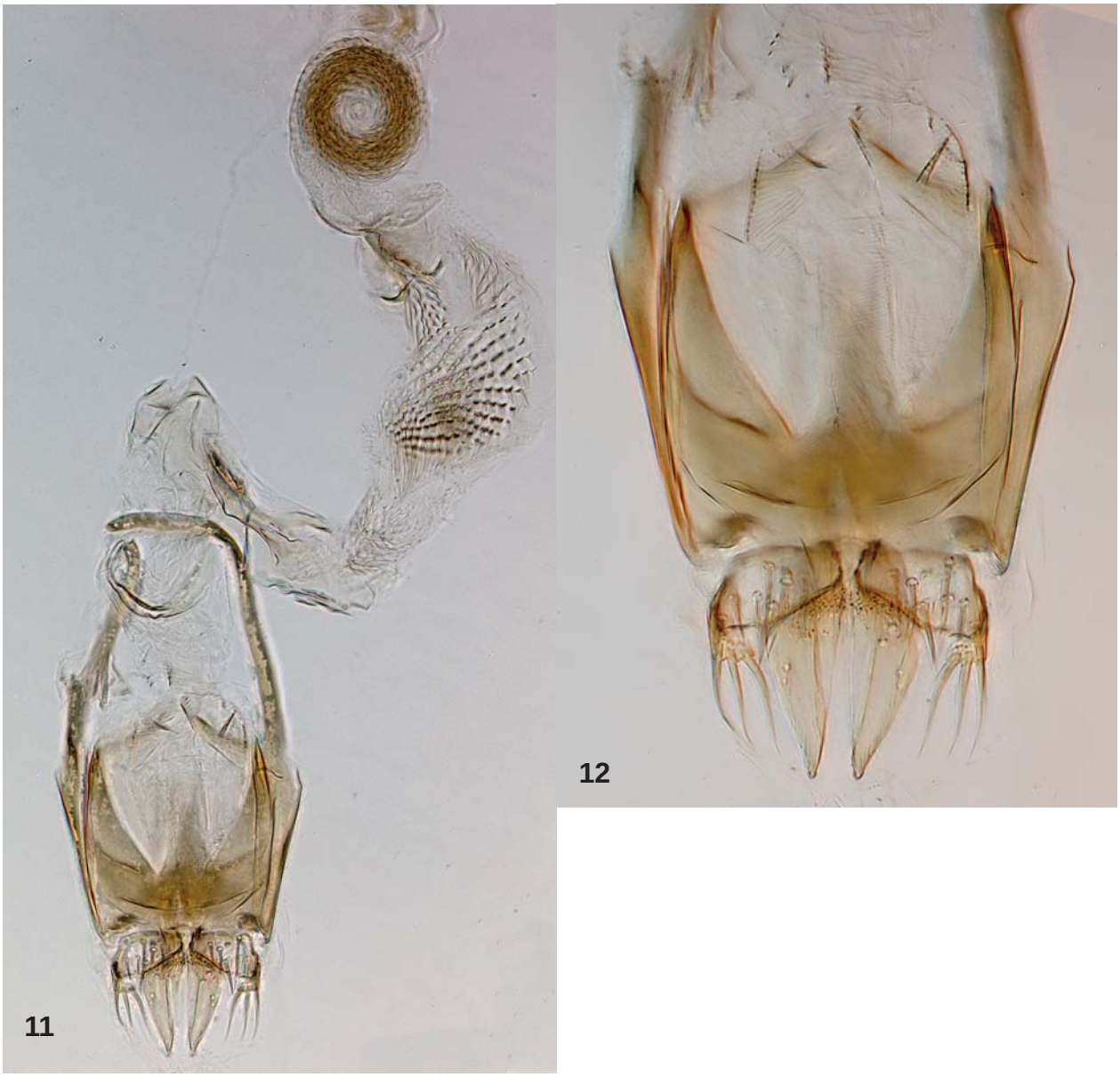
Figure 1. *Paraphloeolaemus vorticosus,* n. sp., habitus.



Figures 2-6. *Paraphloeolaemus vorticosus*, n. sp. **2)** Head, dorsal. **3)** Pronotum. **4)** Elytra. **5)** Mouthparts. **6)** Pro- and mesosternum.

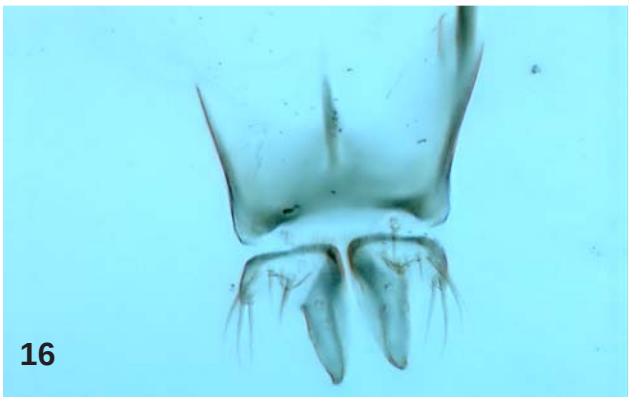


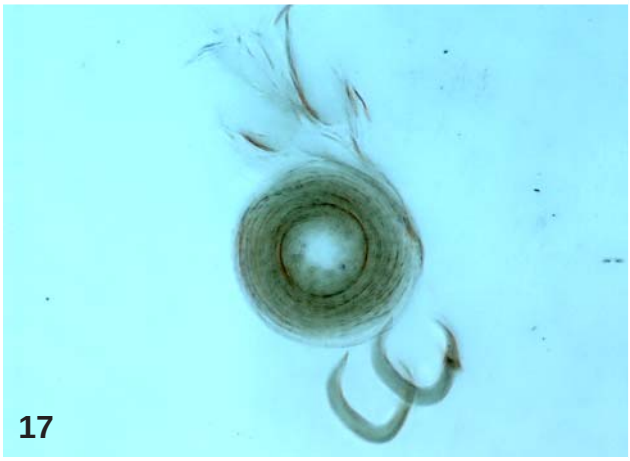
Figures 7-10. Antennal clubs. **7)** *Paraphloeolaemus vorticosus*. **8)** *Paraphloeolaemus vorticosus*, antennomere XI. **9)** *Phloeolaemus quinquearticulatus*, amtennomere IX. **10)** *Rhabdophloeus* sp., antennomeres IX-XI.



Figures 11-12. *Paraphloeolaemus vorticosus*. **11)** Male genitalia. **12)** details of aedeagus.

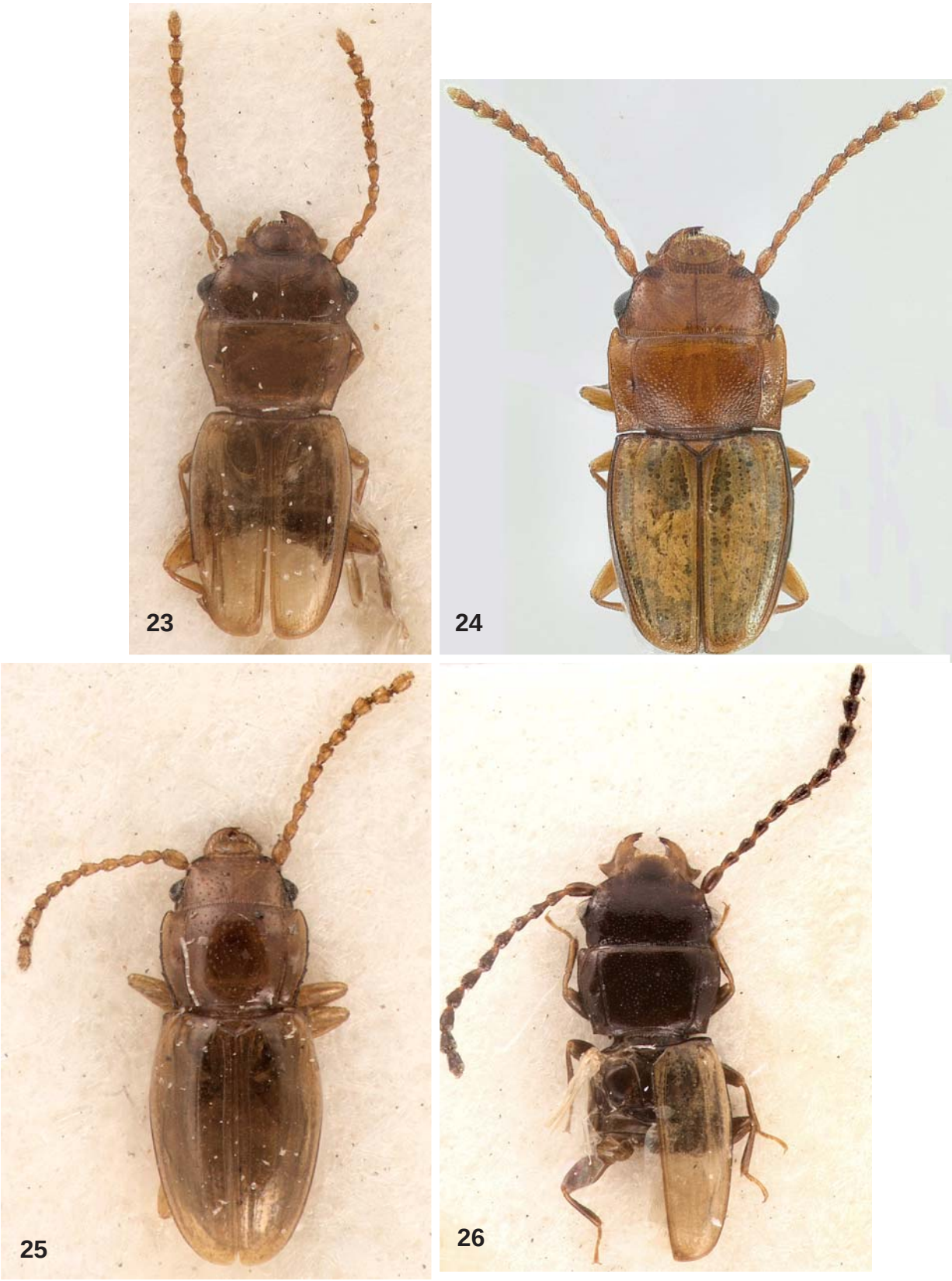
Figure 13. *Paraphloeolaemus pterosiagon*, n. sp., habitus.



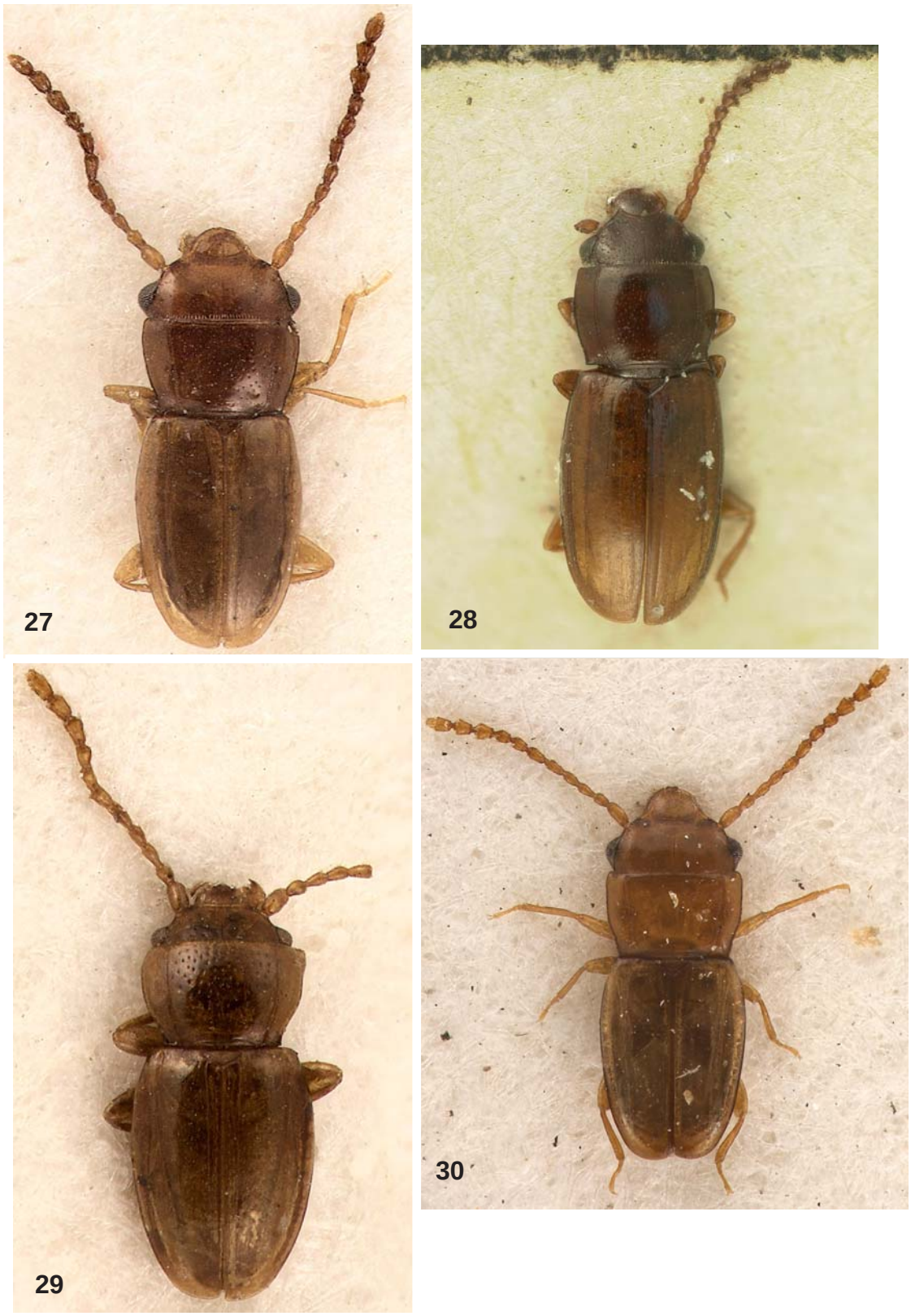


Figures 14-18. *Paraphloeolaemus pterosiagon*. **14)** Head and pronotum. **15)** Head, oblique view showing mandibular process. **16)** Tegmen. **17)** Flagellum. **18)** Median lobe and base of internal sac.

Figures 19-22. Habitus. **19)** *Paraphloeolaemus* sp. **20)** *Phloeolaemus anticus*; BMNH syntype. **21)** *Phloeolaemus boops*; BMNH syntype. **22)** *Phloeolaemus castaneipennis*; BMNH, identification by Grouvelle.



Figures 23-26. Habitus. **23)** *Phloeolaemus championi*; BMNH syntype. **24)** *Phloeolaemus curtus*. **25)** *Phloeolaemus endomychus*; BMNH syntype. **26)** *Phloeolaemus hoplites*; BMNH syntype.



Figures 27-30. Habitus. **27)** *Phloeolaemus ignobilis*; BMNH syntype. **28)** *Phloeolaemus lacerdae*; MNHN syntype. **29)** *Phloeolaemus punctulaticollis*; BMNH syntype of *L. puncticollis*. **30)** *Phloeolaemus reitteri*; BMNH syntype of *L. breviceps*.

Figures 31-34. Habitus. **31)** *Phloeolaemus semiflavus*; MNHN syntype. **32)** *Phloeolaemus sharpi*; BMNH syntype of *L. minutus*. **33)** *Phloeolaemus straminipennis*; MNHN, "compared with Reitter type". **34)** *Phloeolaemus teapensis*; BMNH syntype.